

Notice of Allowability

Application No.

10/034,316

Examiner

Susy N Tsang-Foster

Applicant(s)

TSUKAMOTO, HISASHI

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on 5/3/2004.
2. ☒ The allowed claim(s) is/are 2,3,5-8,10-12,17-23 and 25-65.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

Susy Tsang-Foster

Allowable Subject Matter

1. Claims 2-3, 5-8, 10-12, 17-23, and 25-65 are allowed.
2. The following is a statement of reasons for the indication of allowable subject matter:

With respect to independent claims 26 and 29 and claims respectively depending therefrom, the closest prior art of record, JP 10-012272 A, does not disclose, teach, or suggest the distinguishing feature of perfluoro-1,3-dimethylcyclohexane or C15F33N as the flame retardant material in the electrolyte containing system.

With respect to independent claims 17 and claims depending therefrom, the closest prior art of record, JP 10-012272 A does not disclose, teach, or suggest the additional distinguishing steps of first filling the casing at least partially with a nonaqueous electrolyte solution, waiting a period of time sufficient for the non-aqueous electrolyte solution to penetrate one or more pores of the electrode assembly, and then adding the flame retardant material that is a liquid at room temperature and pressure and substantially immiscible in the nonaqueous electrolyte solution. In contrast, JP 10-012272 A discloses pouring a nonaqueous electrolyte solution along with the flame retardant material in one step into the battery casing (see paragraph 42).

As stated above, during the personal interview conducted on 12/2/2003, applicant's representative gave a power point presentation which showed a significant difference in battery performance with respect to the order in which the electrolyte solution or flame retardant is added where adding electrolyte solution first gives a higher discharge capacity and lower

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resistance and adding flame retardant first that is immiscible with the nonaqueous electrolyte solution gives lower discharge capacity and higher resistance. In view of these unexpected results, method claim 17 and claims depending therefrom are allowed.

With respect to claim 20 and claims depending therefrom, the closest prior art of record, JP 10-012272 A does not disclose, teach, or suggest the distinguishing feature that the flame retardant material is not substantially in the region of the separator. The reference is silent about this feature and it does not appear to be inherent in the reference since the battery in the reference is made by a different method than that disclosed and claimed in claim 17 in the present application. As explained to the Examiner during the interview on 12/2/2003, the nonaqueous electrolyte solvent is first poured into the battery comprising the electrodes and separator and that the solvent permeates the pores of the separator and then the flame retardant added afterwards would not be substantially in the separator region because the flame retardant is immiscible with the nonaqueous electrolyte solvent.

3. Any inquiry concerning this communication or earlier communications should be directed to examiner Susy Tsang-Foster, Ph.D. whose telephone number is (571) 272-1293. The examiner can normally be reached on Monday through Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at (571) 272-1292.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

st/

Susy Tsang Foster

Susy Tsang-Foster
Primary Examiner
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